KEKAHA SUGAR COMPANY, AUTOMOTIVE AND TRACTOR REPAIR SHOPS
8315 Kekaha Road
Kekaha
Kauai County
Hawaii

HAER HI-83-C
HI-83-C

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

AUTOMOTIVE AND TRACTOR REPAIR SHOPS
KEKAHA SUGAR COMPANY

HAER No. HI-83-C

Location:	Kekaha Road Kekaha County of Kauai Hawaii USGS 7.5 minute series topographic map, Kekaha, HI 1983 Universal Transverse Mercator (UTM) coordinates: 04.431600.2429880
Date of Construction:	1940
Engineers & Builders:	Unknown
Present Owner:	Kekaha MS, LLC
Present Occupant:	Vacant
Present Use:	Abandoned
Significance:	The Automotive and Tractor Repair Shops building is associated with the history and development of Kekaha Sugar Company's mill. It is a good example of a large scale vehicular repair building in Hawaii, which reflects its twentieth century origins in its materials, method of construction, and design.
Report Prepared by:	Don J. Hibbard and Wendy Wichman Architectural Historians Mason Architects, Inc. 119 Merchant Street, Suite 501 Honolulu, HI 96813
Date:	December 2008

GENERAL DESCRIPTION AND LOCATION

The Automotive and Tractor Repair Shops building is located on the premises of the Kekaha Sugar Company's mill site. The 53' x 215' building sits to the west of the Warehouse-Field Equipment Repair Shop and runs parallel to Kekaha Road, with its fourteen service bays opening to the south. It has a concrete slab foundation and a corrugated metal, lateral-running, gable roof of varying heights. The building was constructed in at least three, but most likely four, episodes.

Four distinctly different structural sections can be readily discerned. Moving in an east to west direction the first section encountered is a lube rack, which is one bay wide. This is appended to the side of the building and is the most recent building increment, dating between 1965 and 1969. The lube rack is made of reinforced concrete. The 40' long rack is at ground level with a centered, 3' wide mechanic's work pit below grade. Inset into the sides of the pit are shelves where tools could be kept. A 9'-6" concrete incline leads up to the rack, with the pit terminating in the incline as an equilateral triangle. From this terminus five concrete steps descend into the pit. The lube rack is sheltered by a shed roof supported by 4" x 4" wood posts at its far end. This is the only part of the building that is not steel framed.

The lube rack is attached to the oldest section of the building. This section is five bays wide and is readily distinguished from the remaining part of the structure by its greater height. It dates from sometime between 1919-1940. This section, like the sections to its west, is open on the south side and is essentially a large open space with a reinforced concrete slab floor, with support rooms to the rear (north) side. This section functioned in the post-war years as a tractor repair shop, and has a corrugated metal gable roof with shed roofs on either side. The main body of the roof is supported by Fink trusses with king posts and sub-diagonals, which are carried by 6" I-beams. The southern shed roof provides protection to a concrete apron and is carried by a mono Fink truss supported by 4" round, metal columns near the roof's eave line. The two western bays are 15' long, and the three eastern bays are 13'.

A riveted, traveling crane rail traverses the length of the original section and is supported by 8" I-beams. The crane itself is no longer extant. The east facing wall of the building is of corrugated metal and has two pivot windows at its ground level. The southern facing window has a six pane pivot framed on the top and bottom by three panes of fixed glass. The second window also has a six-lite pivot, but is framed on three sides by nine panes of fixed glass.

A shed roof on the north side is supported by Fink trusses and shelters several partitioned spaces at the rear of the building, including a machine shop enclosed by a wire cage at the far right, an elevated superintendent's office at the left, and an office that is set back between the two. These rooms occupy the four eastern bays of the original building. The rear wall of the entire building is corrugated metal. The machine shop has a metal door which leads outside on the north side. The rear office has a

canec ceiling and a pair of twelve-lite fixed windows that look out on the shop's work area. The rear exterior fronting wall has a pair of six-lite pivot windows, framed on top and bottom by three fixed panes, and a six-pane sliding window. A five panel wood door connects the office to the outside.

The shop superintendent's 12'-2" x14'-3" office is elevated above the work area at a mezzanine level. It is accessed by a straight run of 10 metal steps running from the floor directly to a door on the east side of the office. The office has board-and-batten walls, a low-pitched shed roof, and a canec ceiling that follows the slope of the roof. Pivot windows are on three sides. The southern facing window holds a six-lite pivot with nine fixed lites framing it on the top and sides. The office's windows on its two sides both feature an eight-lite pivot framed by a pair of fixed panes on either side. A toilet room is appended to the west side.

The last bay of the original shop building is open, with its rear wall aligning itself with the interior wall of the rear office. A pair of pivot windows, similar to those in the superintendent's office, is in the back wall of this bay.

The last two sections of the automobile and tractor garage were used for truck repairs and were added to the original building sometime between 1947 and 1950. These two sections appear to be two separate building episodes. Although their rooflines (gable with shed extensions on both sides) are the same, the two sections differ in the length of their bays, with the western section having four 20' long bays, while the more eastern side has four 15' long bays. In addition, their roof support systems differ, and the western section has a floor that is 6" higher than the remainder of the building. The western section has a truss system, carried by five 13'-4" high 6" I beam columns, which sits on a 2" high, square concrete footing along the centerline of the building. The truss system consists of a flat double Pratt truss surmounted by a pitched double Pratt truss. The eastern section utilizes Fink trusses similar to the original building. Mono Fink with lower mono Pratt trusses, following the flow of the roofline, support the apron's extended shed roof in both sections.

Four twelve-lite fixed windows are in the west facing end wall, but no windows are in the west section's north wall. As in the original repair shop, the north wall in both sections is where support services are relegated, extending approximately 16'5" out from the wall. The western-most bay was a tire shop which flows out into the larger shop space. On its north side it has an 8' high, sliding chain link gate. In 1983 storage cages were adjacent to the tire shop and extended for five bays over the two post-war sections, with a lavatory in the next bay. The eastern-most bay of the more east section was open on the north side to allow for vehicular passage, and featured a 7' high chain link sliding gate. Sometime after 1983 the storage cages were removed, and the two bays next to the tire shop were encased in corrugated metal. The next three bays are now open space, with four sets of eight lite pivot windows flanked on either side by two-pane sidelites, situated in the north wall in the two western-most bays of the east section. The lavatory is no longer extant, and features a 4'-3" hollow tile wall surmounted by

corrugated metal on the wall facing the vehicular passageway. The other two interior sides are enclosed by wire mesh.

HISTORICAL CONTEXT

See the HAER Report (HAER No. HI-83-A) for the Kekaha Sugar Company Sugar Mill Building for the development of the Kekaha Sugar Company's sugar mill.

The initial phase of the automobile-tractor repair shop was most likely constructed in the 1920s, as by 1931 Kekaha Sugar Company was already using tractors and steam plows in its fields. Mechanized vehicles played an increasingly larger role on the plantation during the 1930s, and by 1935-1936, Gilmore reported that Kekaha had eight tractors, fourteen trucks, and one 1,000 gallon tank truck. The conversion to gasoline-powered vehicles continued as the harvesting of the cane was mechanized in the late 1930s, so that by 1939 Kekaha supported a fleet of sixty five trucks and automobiles, as well as ten tractors. In 1947 trucks finally supplanted the railroad in transporting the harvest to the mill and the final product to the pier. With an increased reliance on automotive equipment, the plantation's fleet increased to one hundred ten small vehicles, including utility trucks, dump trucks, pickups and automobiles, and thirty two large trucks for hauling the cane to the mill. The expansion of the automotive and tractor repair shop in the immediate post-World War II years reflected this increased utilization of gasoline-driven vehicles.

SOURCES

Maps

Sanborn Fire Insurance Map for Kekaha Mill, 1919

Original Drawings:

Approximately one hundred original drawings and blue prints for the Kekaha Sugar Company's Sugar Mill and its machinery exist. These abandoned drawings were discovered in the mill office, and are incomplete. The plans will be deposited in an appropriate repository, which has yet to be determined. The following drawings provided information for this report.

Title & Sheet #	Date	Office in Title Block	Drawn By	Drawing Number
Fire Protection System	June 25, 1941	Civil Engineering and Survey Department		383
Watchman's Route	June 26, 1947			

Fire Protection System	July 8, 1950	Civil Engineering and Survey Department		383
Fire Protection System	July 22, 1969	Factory Department	J.K.	
Automotive Shops Layout	June 7, 1983			
Fire Protection System	Feb 17, 1985	Factory Department	J.K.	

Gilmore Hawaii Sugar Manuals for 1931, 1935-36, 1938-39, and 1954 provided information on the size of the plantation's vehicular fleet.

PROJECT INFORMATION

The following documentation was prepared in response to the proposal to demolish the historic property and build housing on the approximately twenty one acre parcel. The purpose of this documentation is to historically record the architectural and mechanical elements of the mill and its supporting structures. The property owner and the Hawaii State Historic Preservation Division (SHPD) have agreed that the mill complex is over fifty years old. The SHPD in a July 15, 2008 letter indicated that the office believed the mill complex met the criteria for inclusion in the National Register of Historic Places. SHPD recommended that HABS documentation be completed as a means of mitigating the loss of this historic property. The owner agreed to the SHPD's request for documentation, and after further discussion between Mason Architects and SHPD concerning the presence of intact machinery in the mill, it was decided the documentation would follow Historic American Engineering Record (HAER) standards.

The project manager for the HAER documentation was Polly Cosson Tice of Mason Architects, Inc. Don J. Hibbard, Ph.D. and Wendy Wichman of Mason Architects were the researchers and authors of the reports. Both Polly Cosson Tice and Don Hibbard are architectural historians who meet the Secretary of the Interior's Professional Qualifications in architectural history. Carol Stimson of Mason Architects assisted with the editing and production of the reports. The large-format photographs were taken by David Franzen of Franzen Photography.

Location Map
U.S.G.S. Kekaha, Hawaii, 1983:

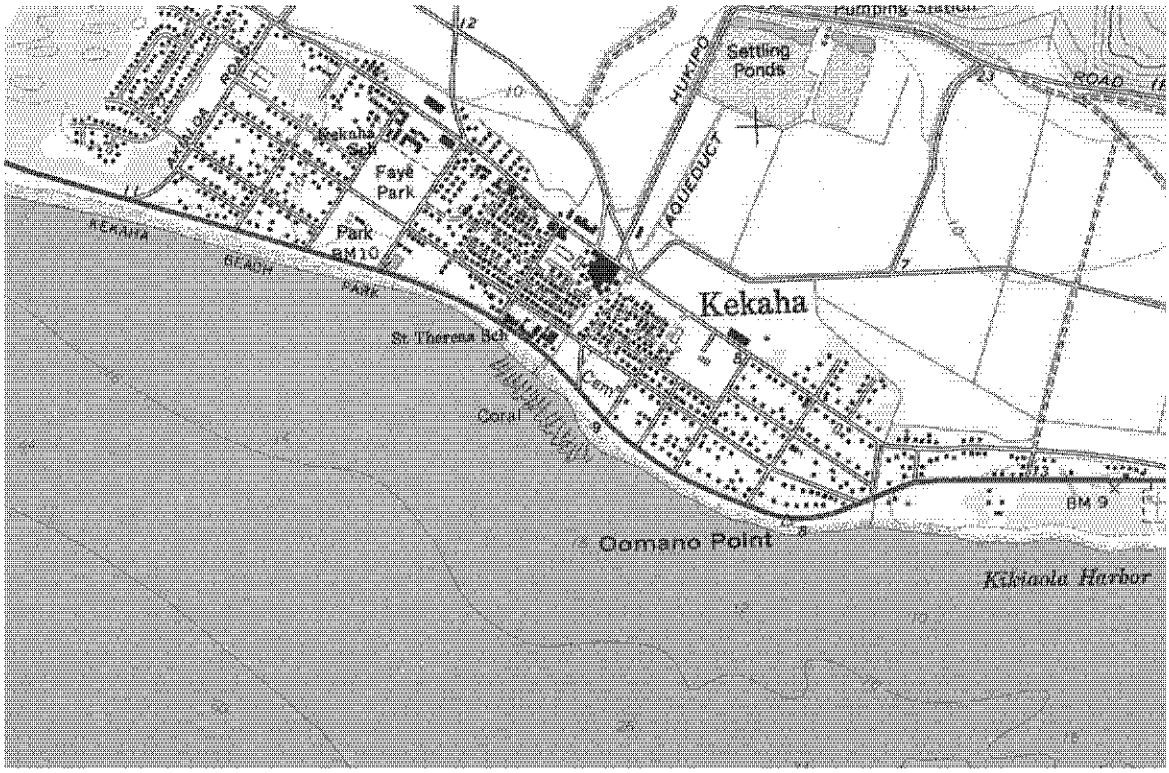

Figure 2:
Automotive and Tractor Repair Shop, Floor Plan